Research on eSports and eSports Industry in China

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Abstract

Abstract: eSports is a worldwide cultural phenomenon rising rapidly since the beginning of the new century, attracting a large number of participants and spectators. Its main body is teenagers. Under the influence of many factors, this cultural form is sweeping the world, resulting in a very extensive and profound economic and social impact. eSports are born from electronic games. After decades of development, the eSports industry is moving towards the development road of professional sports and competitive sports. The first round of the industry circle, which began in 1998, has entered the second round of industrial wave, and the center of the world eSports industry is also transferred to China. At present, we should not only realize the new opportunities that eSports bring to economy, science and technology and sports, but also follow the laws of economy, sports, and the law of social development, and handle many negative problems in the development of eSports and eSports industry.

Key words: eSports; eSports industry; sports

1 The Necessity of Research in eSports and eSports Industry

1.1 eSports is becoming a worldwide cultural phenomenon

Electronic sports or eSports is a kind of worldwide cultural phenomenon rising rapidly since the beginning of the new century. It attracts amounts of participants and spectators, main body of which is teenagers. With many integrated factors, this kind of culture is increasingly popular across the world and brings extremely widespread and profound influences.

The International Olympic Committee announced that eSports should be recognized as a kind of sporting activities in the sixth session of the summit on October, 2017. The IOC gave four points about eSports as follows. “Firstly, eSports are showing strong growth, especially within the youth demographic across different countries, and can provide a platform for engagement with the Olympic Movement. Secondly, competitive ‘eSports’ could be considered as a sporting activity, and the players involved prepare and train with an intensity which may be comparable to athletes in traditional sports. Third, in order to be recognized by the IOC as a sport, the content of ’eSports’ must not infringe on the Olympic values. Fourth, a further requirement for recognition by the IOC must be the existence of an organization guaranteeing compliance with the rules and regulations of the Olympic Movement.”

With the decision announced, the question has finally been settled which the International Sports Academia has discussed and debated for about 20 years. eSports has been officially marked the label “sporting activity” and it
accelerates the speed that eSports becomes an officially sports item.

Compared with international sports organizations, General Administration of Sport of China officially selected eSports as the 99th formally competitive sports item as early as November 18, 2003. Moreover, eSports was changed to the 78th item later in year 2008. eSports became an item in Asian indoor martial arts games in 2017 and it will be an officially competitive sports item in the 19th Asian Games in Hangzhou 2022.

Thus it can be seen that eSports has won the recognition and attention of domestic and international sports organization. People have gradually deepened scientific recognition about eSports. As a result, Time is propitious for normative studies about competitive eSports activities.

1.2 The influence of eSports industry can’t be ignored

From the point of industry, the first round of the eSports industrial circle, which began in 1998, has currently entered the second round of industrial wave, and the center of the world eSports industry is also transferred from South Korea to China so that it brings new opportunities and challenges for the development of sports industry in China.

1.2.1 The scale of eSports industry is huge and attracts high social attention

In 2017, the scale of China’s eSports industry reached more than 40 billion yuan. Besides, the number of eSports users reached 260 million and the number of potential users was 450 million. At present, eSports industry is far more than a lot of traditional sports in terms of market size and the number of users, and there is still a lot of room for growth in the future.

1.2.2 eSports has a huge impact on the traditional sports industry

According to our survey in 2017, domestic young people aged 16 to 25 years old spend 33% of their leisure time on eSports and other online games on average. About some deeply addicted game players, games even occupy more than 90% of their free time which squeezes and replaces most of their time of doing traditional sports activities. Not only the situation in China, in the countries represented by Germany and the United States which have well-developed traditional sports industry, eSports industry has a huge impact on the number of viewers, ticket sales, and effective broadcast time for traditional sports projects using television as the main broadcast medium.

According to a survey conducted by Frank N. Magid Associates in America, the average annual increase exceeds 100% in the number of US e-sport audience in 2015-2017, and correspondingly, the degree of attention of traditional sports has dropped by 15% in college students, which shows a direct relationship between the two opposite changes. Therefore, ESPN, which had always neglected eSports, set up a dedicated eSports reporting team in 2016 and the U.S. professional sports league represented by the NBA, establish eSports departments or directly invest in eSports companies so that they can use the attention about eSports of young people to ensure more data flow of them. Thus it has become a prominent issue for sports managers in various countries to face the increasing encroachment of traditional sports activities by eSports and attract teenagers to traditional sports again through eSports.

1.2.3 eSports has more and more scientific and technological content

From the current trend of global technology development we can see that the major powers are fiercely competing with high technologies such as artificial intelligence, 5G, and next-generation chips. With the increasing investment in technology and the increasingly close relationship between technology and consumption, whether scientific and
technological achievements can be rapidly transformed into actual social needs becomes the key to the continuous development of high-tech industries in various countries. In fact, at present eSports products have always been chosen as the first application of various new technologies. Taking the most popular artificial intelligence technology as an example, the State Council of China issued a guideline on developing artificial intelligence in July, 2017 which established China's hi-tech development strategy represented by artificial intelligence technology. And in November of the same year, in StarCraft competition between AI and human held by Sejong University in Seoul, South Korea, the player Stork created 4-match winning streak over AI. Stork defeated AI and won honor for human, which also brought him 5 million won bonus. The result of this competition is in stark contrast to the situation in which humans have repeatedly lost in the chess match and triggers a continuous attention and research boom of the AI researchers both at home and abroad. The researchers generally believe that human's victory in the eSports games is not a coincidence which has a profound meaning of technology. Compared with traditional “intellectual game projects” (represented by chess and card games), e-sport games can better display human’s creative thinking and display the variability, possibilities, and complexity of human’s capabilities, which is the ultimate rivals to artificial intelligence. Currently, not only artificial intelligence technology, but also other cutting-edge science and technology, such as block chain technology, big data technology, quantum communication technology, new visualization technology, smart wearable technology, etc., have all chosen eSports as their primary application. eSports has become the largest experimental field and the most direct application carrier for human frontier technology.

1.3 The negative effects of eSports on adolescents are increasing

“Children can easily indulge in video games” is the focus of social issues in the past 20 years. With more and more developed communication technology, more and more convenient gaming ports, and a wide variety of online games, this problem has become increasingly serious. eSports games base on online games and have broader scale of audience. Besides, eSports games are more attractive to adolescents so that the games inevitably affect teenagers. This kind of negative influence can be divided into two levels: The first comes from the negative influences of online games on adolescents. The second is the problems in the development of eSports industry which is not good for the healthy growth of adolescents. The core of all these problems is the issue of adolescents.

1.3.1 Common issues between eSports and traditional online games: games bring negative problems to adolescents about their health and social psychology

1. Health problems of adolescents. Online games (including eSports games among them) have caused great obstacles to adolescents' healthy lifestyles. For example, for primary and middle school students, the internationally accepted standard is that the daily entertainment screen time is no more than 2 hours. eSports players, whether playing games or watching live games on the Internet, will greatly increase their entertainment screen time, thereby strengthening their unhealthy sitting posture. According to our survey in 2017, domestic young people aged 16 to 25 spend 33% of their leisure time on eSports and other online games on average. This inevitably takes up time of young people's participation in other normal sports activities. Although China's administrative departments have
successively introduced “Development Standards of Online Game anti-indulgence System”, “Real-Name Authentication Program of Online Game anti-indulgence System” and some other control measures. And most professional game developers have also developed some anti-obSESSION settings. However, there are still lots of problems. For example, it is undeniable that currently the age of juveniles in contact with electronic games tends to be younger, the methods of contact with games are more difficult to monitor, play games or watch games for too long and the interest of games is difficult to transfer, etc. As a result, they are all of the most anxious health problems.

2. Social psychology problems of adolescents. eSports games, like online games, can cause problems that teenagers tend to be caught in psychological problems such as escapism, emptiness and even violence. Taking into account the immense attention of eSports games and live broadcast stars in the majority of adolescents, the unpleasant game behaviors such as depression, indulging, vulgarity, money worship and cheating will bring negative influences to them. Therefore, it is imminent to prevent and stop these negative effects.

1.3.2 The negative problems of eSports industry during its own development

1. Problems appear in the professionalization of eSports such as younger age, short sports life, etc. We have found through preliminary investigations of domestic eSports clubs that most domestic eSports players currently retire in their twenties, with very short exercise cycle and lack of follow-up protection. The high-intensity training of professional eSports athletes for at least 50 hours a week often leads to physical exhaustion, nervous fatigue, and even the use of stimulants, resulting in bad social influence. The emergence of these problems shows that currently the maturity of eSports industry still needs to be improved, and attention must be paid to the protection and arrangement of athletes.

2. Problems against sports morality in eSports competitions. In the current eSports industry, there have been a series of social problems that are against sportsmanship and sports laws, such as income malformation, unrealistic comparison, upside down income between anchors and athletes, and cheating in order to obtain clicks. What’s worse, it’s showing a growing trend. In terms of the root reason, the emergence of these problems is not only about economic reasons for the transformation of the payment model in platform economy, but more the lack of social education within the industry and social supervision. The emergence of these problems not only affects the healthy development of the industry itself, but also imbibes adolescents with bad values and morals, which also needs us to pay attention and alert.

1.4 eSports industry management policy still needs improvement

At present, it is still an important proposition placed in front of sports managers in various countries about how to overcome the negative effects of eSports on healthy lifestyle of teenagers and solve the outstanding social problems in the eSports industry, bring positive impact of eSports on economic growth, technological progress, and sports cultural education.)

However, judging from the reality, there are still relatively serious problems in the absence of management of eSports industry in China.

1. There are many departments involved in the management of China’s eSports industry now. The power is scattered and the main body of departments is unknown. However, the policies introduced by various departments are mostly emergency policies. The continuity, directionality and effectiveness of the policies
are not satisfactory. Research of eSports policy is still lagging behind. Due to the interdisciplinary attributes and the lag of academic research about eSports, the industry management of eSports has been always lack of effective theoretical support. After the IOC made sports verification for eSports and in the background of the sports management organizations in developed countries which have focused on the healthy development of eSports, the call for management of eSports industry with sports management methods has become increasingly high. What’s more, the eSports management department has also put forward higher requirements for the research on the basic research about theory of eSports. Unfortunately, currently the academic research on eSports management policy is still weak, and the discipline construction of eSports is almost blank. Therefore, eSports industry that has great influence on teenagers and lack of effective theoretical support, currently need policies and social focus urgently. To meet new situation and requirements, the sports community has the responsibility to start researches on the new sports industry format represented by eSports as soon as possible.

2 The Concept of eSports and its Evolution: from Games to Sports

ESports has been through several stages of development since its birth with only a few years. Its form, characteristics and modes have always been in development and changing. Understanding of eSports is also constantly deepening and improving. Therefore, at the beginning of research, it is necessary to systematically manage the changes in the concept of eSports.

2.1 The concept of eSports and its evolution

For a long time, “ESports” has no clear and strict definition. It is more like an agreed-upon term, and it continues to expand its connotation with practice.

2.1.1 "eSports" defined in Chinese

The most typical and authoritative definition of the word “eSports” in Chinese is that General Administration of Sport of China officially approved eSports as the 99th official sports competition in November 2003 (eSports was changed to the 78th item later in year 2008). This is the first time that "ESports" has been proposed by the government and has been widely recognized and used in the industry.

At present, the statement made by sports management departments generally holds that there are two characteristics of eSports that are “electronics” and “sports”. “Electronics” refers to its methods, which means any sport needs appropriate equipment and venue. ESports is based on information technology as the core of various hardware, software and the environment created by it, which is similar to traditional sports but indeed the difference. “Sports” refers to the essential characteristic of sports, that is, confrontation. As a sports item, confrontation is the most basic feature. ESports have multiple classifications and projects, but the common core must be confrontation and competition.

There are also some other different definitions of eSports in our society.

Defined by Baidu encyclopedia: ESports is a sports item in which the electronic game competition reaches the “athletics” level. ESports is the use of electronic equipment as sports equipment, and the intellectual confrontation between people. It can exercise and improve the participants’ thinking ability, reaction ability, eye and limb coordination. Besides, it can develop willpower and foster the team spirit.

Defined by Tencent: ESports is: eSports is a digital entertainment culture of sports industry that is based on games and goes beyond games. It has unique commerciality and user
values which integrates technology, sports, entertainment and social contact.

Overall, due to the definition of eSports by government departments and industries, all give eSports the attribute of “sports”.

2.1.2 “eSports” defined in English


In fact, before 2015, international gaming community often used “competitive computer games”, “competitive gaming”, “cyber games” etc. to express “eSports”. For example, the most authoritative electric competition in the industry, "WCG" (World Cyber Games), uses the term “Cyber Games”.

The development of the word eSports from the past word “games” to today’s “sports” actually reflects the changes about eSports in international cognition.

2.2 Changes in the connotation and extension of eSports

2.2.1 The connotation of eSports: eSports is a kind of competitive sports

Generally speaking, eSports refers to the process of sports activities with the main purpose of climbing the peak of sports technology and creating excellent sports performance based on the full-scale development of the body and maximizing the potential of people in terms of physical strength, psychology, and intelligence. Judging from the characteristics of competitive sports, eSports also have general characteristics of competitive sports: 1) The first is fierce competition. Fierce competition is the essential feature of competitive sports that distinguishes from school physical education and popular sports. Competitive sports are also exclusive due to its competition. 2) The second is normative rules. In order to ensure that athletes exert their skills and tactics, modern athletics have formulated a large number of rules to maintain competitions on their rails. At the same time, the technical and tactical training of athletes is based on the normative requirements. 3) The third is fairness. Competitive sports do not favor any of the contestants, and clearly specify the competition items, time, location, venue equipment and athletes' qualifications. What’s more, competitive sports require the relevant participants of the competition to abide by a common code of conduct. 4) Openness. Openness enables sports to have greater ability to communicate and greater influence, which promotes the exchange and competition of sports skills and tactics, and advance the fairness of events. 5) Benthamism. Competitive sports have a clear utilitarian purpose, and there will be various forms of benefits along with victory. 6) Uncertainty. Sudden and unpredictable situations in the competition often occur, which is the charm of competitive sports. 7) Entertainment. With the increasingly fierce competition in development, competitive sports have not lost entertainment characteristics. For participants, they can obtain psychological satisfaction by winning or simply participating. For the viewer, they can get relaxed, free and beautiful feelings. Judging from the seven major features of competitive sports in general, eSports are undoubtedly well-qualified.

However, for a long time, domestic and foreign academics have always had a completely different view on whether e-sport is a “sport” and opponents have the upper hand. The main points of the opponents are: 1)
ESports do not have the physical performance of sports; 2) ESports cause people to fall into a virtual world and lose themselves, further losing the subjective character of the person himself and even contradict with the essence of sports – “Naturalization of people”. 3) There are many unfavorable phenomena that are contrary to the spirit of sports in the development of eSports.

With these three questions, we investigated the eSports clubs in Beijing, Shanghai, Zhejiang, and Guangdong. We interview eSports managers, eSports players and eSports coaches. Besides, we conducted experts’ interview with eSports scholars and sports scholars at home and abroad. The preliminary conclusions are summarized as follows:

1. eSports have characters of high-intensity sports to a certain extent. First of all, not all games with competitive features can be verified as eSports. Only those games that are uncontroversial and have high instant operational intensity can become mature eSports. In eSports competitions, professional eSports players are actually highly dependent on their bodies. They need faster reaction speed than their opponents, higher APM values (the number of instructions that can be executed by mouse clicks and keyboard strokes, professional players generally require a standard of more than 200 operations per minute), more perfect hand-eye coordination and a variety of training techniques. The physical and psychological requirements for players such as load intensity, physical endurance, depth of focus, and psychological bearing capacity are all very high in eSports competitions. In this sense, eSports really help to improve player's hand-eye coordination and develop intelligence. However, in the form of exercise and physical contact, the current limitations of technology result that the majority of eSports is still limited to the coordination of hands, eyes and brain (key and mouse, screen, players) ,which is apparently lack of physical activity characteristics of large muscle groups. Moreover, the high-intensity hand movements on the screen (especially the mobile phone games about the screen of mobile phone) will lead to decreased vision and strained hand muscles when using for a long time, which is harmful to the health of teenagers. Therefore, while we affirm that eSports have high-intensity sports characteristics and are conducive to the improvement of parts of physical fitness, we must also admit that current eSports have great technical obstacles. Over-playing games is definitely harmful to the healthy development of teenagers about their physical and mental health.

Second, high-level eSports players also need a lot of formal training and preparation before games. After eSports become professional, the level of eSports for professional players depends not only on talent but also on a large number of daily training and preparations before the game. In recent years, professional eSports clubs at home and abroad have increased the emphasis on professional players’ daily training, coaching and auxiliary training. The systemic and scientific training have been continuously improved. With the further development of eSports professionalization, the requirements for training and pre-match preparations will continue to increase.

Finally, although eSports haven’t had a wide range of “high-volume physical activity” features with the current technological conditions, from the perspective of development, the ever-changing globalization and information technology are accompanied with breakthroughs in visualization and wearable technology so that in the future, the way of human-computer interaction will inevitably have breakthrough, which may lead to a physical breakthrough in
eSports. In fact, many fierce bodily sports video games with virtual reality devices have emerged on the market. Their exercise intensity and load energy have reached or even surpassed many traditional sports items. At the same time, there are also many traditional sports programs that have reentered into the consumer market with eSports games. The traditional martial arts game is a good example of a fighting game developed with new wearable devices. With increasingly high-tech possibilities, lower and lower costs and increasingly convenience of using, the requirements of physical fitness about eSports will continue to increase.

2. eSports does not change but continuously strengthens the subjective characteristics of people. ESports is a new type of cultural phenomenon formed after recombination of information technology and human social activities. It is a phased product of post-modern society development whose main body of cultural creation is still human.

Unlike most video games, eSports is special existence that is isolated from many electronic games. The purpose of eSports playing is to achieve confrontation with others, thus getting self-realization and satisfaction. Electronic equipment is only a tool used to complete this kind of confrontation. Just like basketball is a tool for basketball sports, the leader behind eSports games is still the person itself.

ESports is a typically embodied recognition. The body's physical factors play a key role. ESports is from the "special sports reality" based on cyberspace and athletes participate with digital means, which breaks the space-time constraints of traditional sports and widens the range of humans’ access to new cognition. On the other hand, once an electronic game has become an official game, it will show obvious individual differences about different players' ability to control the game and comprehensive use of game skills. Amateur players and professional players use the same mouse, keyboard, screen and other input tools, however, the level of competition is quite different. The underlying reason behind this is the embodied characteristic of eSports. That is to say, the physical attributes of human as the subject determine the differences in subjective cognition. Furthermore, this is the fundamental reason why current artificial intelligence technology based on algorithm and speed is still unable to overcome top eSports players.

We can also cognize eSports from “physical literacy”. “Physical literacy” is a brand-new theory that has been hotly debated in the international sports community in recent years and has important theoretical and practical significance. The theory advocates “One Body and Mind: Rethinking the meaning of physical activity”; “Experience body knowledge: Comprehending the meaning of physical activity”; “Interaction with the environment: The source of the meaning of physical activity”. The three components bring new enlightenment on research of sports. A new revelation has been reached, aiming at the misunderstanding caused by the "promoting model based on health" of the instrumental sports concept of the past decades on contemporary sports and explores new significance of human beings engaged in physical activities in the contemporary high-tech environment. Compared with ordinary online behaviors such as watching TV, playing online games, watching short videos, etc., eSports behavior is one of the most direct, active, and eye-catching ways for humans to interact with modern internet technology environments. It is a product of science and technology. It also breaks the constraints of science and technology on people, realizes the purpose of competition in
the virtual environment, and already has elements such as “motivation and confidence” and “knowledge and understanding” advocated by the theory of physical literacy. In the future, if eSports production can be further improved with introduction of "body literacy" elements such as "physical ability" and "physical activity willingness" into eSports technology development, it will undoubtedly bring a qualitative leap to the entire industry.

3. Standardized eSports can also reflect the spirit of sports. For a long time, due to poor guidance and supervision, there have been a large number of excessively publicized bonuses in the eSports competition, highlighting the pecuniary benefits, plug-ins, cheating, and distortion of values. At the same time, in current eSports competitions, there are also people and deeds in pursuit of equality, self-discipline, positive attitude, fair competition, faster, higher, and stronger spirit that fully embody Olympic sports spirits but guidance of public opinion digging is not enough. Furthermore, the phenomenon of these violations of sports in eSports industry also precisely suggests that it is necessary to attach importance and bring educational function of sports to the development of eSports industry.

In summary, although there are still some gaps between eSports and sports marked by large muscle groups, eSports have basic characteristics of competitive sports. Now the speed of progress and application is far beyond that in any historical stage of the past. eSports that rely on science and technology has been widely accepted by massive young people and should be given more attention and exploration instead of blind blames.

**2.2.2 Extension of eSports has expanded from online games to sports events**

1. Behavior mode of eSports has been different from online games. eSports come from online video games and are independent from traditional online video games. One of the major misunderstandings about eSports in society is that it confuses eSports behavior and online game behavior. Although most contents of eSports come from online games, eSports have more obvious sports features than online games: 1) Different functions. The function of online games is entertainment and social networking while the function of eSports is sports competition. 2) Different rules. eSports have clear and unified rules. It must obey a set of rules such as time, round, technique and behavior whether it is a regular game or an ordinary player's entertainment game. In contrast, online games lack clear and unified rules, even the majority of them pursues a high degree of freedom of behavior without rules. 3) Different spiritual states. eSports competitions have a fair and equitable spirit of sports. Players use electronic means to achieve intellectual and physical confrontation, and they pursue the spirit of winning. Online games are mainly human-machine interactions or social-emotional interactions between people which means diversified self-satisfaction in the virtual space. 4) Different technical requirements. eSports, as a sports item, requires a long period of standardized training, technical reserves, and athletic talent. Although there are also difficult requirements for online games, there is no requirement for systematic training and this will be more apparent with more professionalization of eSports in the future.

2. The composition of eSports industry is different from the online game industry. The biggest difference between eSports and online games is that eSports industry is an industry that is generated by spread of eSports events, while traditional online games are generated around the game copyright and game time. The main body of the eSports industry is the spread of eSports competition events (including online and offline) whose users
participating in are audience rather than players which has no different from the basketball and football game industry. From the current electronic technology industry chain, it has far exceeded the scope of general online games and is more close to category of professional sports.

3. The growth rate of eSports is faster than that of online games, and it has a trend to greatly surpass online games. According to data in the “2017 China eSports Industry Research Report” published by iResearch.com, the year-on-year growth rate of the China eSports market was as high as 59.4% in 2017 and the size of market exceeded client games and reached 30% of the entire game market for the first time. Whether from the perspective of increment or stock, the industrial value creation of the currently representative eSports far exceeds the original online games itself. Of course, it is undeniable that much of the classic eSports cultural source is the content of original online games, but once the game becomes an official competition, then it is the category of competitive sports events instead of the scope of online games. This is true from the early days of StarCraft, CS to the now popular League of Legends and the King of Glory.

2.3 The definition of eSports in this study

To sum up, at present, eSports has emerged from online games, forming a unique direction of sports development, with the basic characteristics of competitive sports. In terms of the controversial part of exercise intensity, it can be highlighted and maintained by making strict standards for eSports. On this basis, this paper proposes a definition of eSports that is more suitable for current reality.

“eSports” is an evolution of human sports behavior in the information age. It is based on the content of electronic games and uses electronic interactive technologies and hardware to realize competitive sports activities between people.

From the perspective of industrial statistics and classification, the eSports industry mainly includes the eSports service industry in the Internet game service (6422), the eSports show industry in sports competitions and performance industry(9052), eSports live broadcast services in the Internet information service (6420), eSports publishing in digital publications (8626), and eSports venue service industry in the entertainment industry (901). The eSports industry is the collection of those industries. Judging from the classification of cultural attributes, “eSports culture” is the intersection of sports culture and video game culture.

2.4 Basic situations of eSports

2.4.1 Types of eSports

With the development of eSports industry, types of eSports in the world are constantly evolving and changing. eSports has evolved from the first round of industry cycle of shooting & survival games and real-time strategy games to the second round which is mainly based on MOBA games and at the same time supplemented by real-time strategy games and shooting & survival games. Along with them are card games, sports and many other types of games, they are prospering together. The gaming platform has spread from the PC-side LAN to the mobile-end and arcade-side, so that more people enjoy the joy of eSports.

Table 1 Type and Representative Game of eSports

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<th>Types of eSports</th>
<th>Representative games</th>
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<tr>
<td>MOBA games</td>
<td>LOL, Dota2</td>
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<tr>
<td>Real-time strategy games</td>
<td>StarCraft, Warcraft</td>
</tr>
<tr>
<td>Shooting and survival games</td>
<td>Playerunknown's Battlegrounds, CS-Go</td>
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<td>Card games</td>
<td>Hearthstone</td>
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2.4.2 Summary of domestic and foreign major competitions of eSports

1. Domestic Tournaments

1) China Mobile eSports Games, is abbreviated as CMEG. It is the first official mobile eSports sponsored by the Sports Information Center of General Administration of Sport of China, in association with Datang Telecom Technology & Industry Group, advocating the participation of whole people and green health. The competition is conducted both online and offline, containing three stages: preliminary, promotion and final. Each year, it is held in many competition regions.

2) eSports Champion League, is abbreviated as ECL. It is a competition set up by China’s eSports Development Center, which is supported by General Administration of Sport of China and Beijing Municipal People’s government. In the Shijingshan District of Beijing, long-term eSports competition halls are established with the goal to create the world’s largest eSports tournaments.

3) National Electronic Sports Tournament, is abbreviated as NEST. It is hosted by the Sports Information Center of General Administration of Sport of China, and undertaken by Shanghai Hua’ao eSports Information and Technology Co., Ltd., Zhejiang Daily Digital Cultural Group Co., Ltd., and Xiamen C&D Co., Ltd. The tournament is divided into two stages: online and offline games, with its scale and length on top in China.

4) League of Legends Pro League, is abbreviated as LPL. It’s the highest-level professional games of League of Legends in mainland China. It is also the only official channel to the global finals in Chinese mainland division. The annual LPL consists of the spring and summer games, each of which is divided into regular games and playoffs. The top eight teams in regular season will be promoted to playoffs and continue to compete for the season championship and high bonus. In 2016, with strong online media publicity, especially the online live platforms, LPL witnessed an astonishing 5 billion viewers. The number of audience of League of Legends finals was 43 million, exceeding the Game 7 of NBA Finals which had 31 million viewers.

5) King Pro League (KPL) is Tencent’s highest-standard promotion event of King of Glory.

2. International Tournaments

1) World Cyber Arena (WCA)

The World Cyber Arena, founded in 2014, is a global eSports. Relying on its mature system, it has built an eSports ecosystem around game ecology and is committed to promoting the vigorous development of eSports events and eSports industry. It also took over the WCG at the low tide of international eSports public opinion and continues to promote the sport spirit of World Cyber Games.

2) The International DOTA2 Championships (Ti), founded in 2011, is a global eSports event. It is hosted annually by Valve Corporation in Seattle, USA. As an International high-level competition, it enjoys the largest scale and highest amount of bonus. Ti 5’s total 5-million-dollar bonuses makes DOTA 2 board the peak of public opinion, while Ti 6’s total bonus is more than 20 million dollars with unprecedented influence. The champion alone can enjoy more than 9 million dollars of prize, which surpassed the bonus of Tennis Four Grand Slam Singles Champions that year (3 to 4 million dollars).

3) Cyber athlete Professional League (CPL), founded in the United States in 1997, which has currently engaged in the largest professional eSports leagues around the world.
Meanwhile, it is approved as a professional
game tournament league in 30 countries, and
has successfully run dozens of events around
the world.

4) Electronic Sport World Cup (ESWC),
originated in France, is formerly known as
“Lan Arena”, along with the CPL and WCG
canceled), which is regarded as three eSports
events in the world today. The ESWC is also
an international cultural event initiated by 11
members including China, and has more than
60 partners. In the 40th anniversary of the
establishment of diplomatic relations between
China and France, it also became an
“e-diplomacy” with the feature of unique
information age.

5) World Electronic Sports Games (WESG).
WESG is a world-class eSports tournament
created by Ali Sports in 2016. The event
covers 125 countries and regions in the world.

6) League Of Legends World Championship.
The League of Legends Global Finals is the
largest annual game in the League of Legends
competitions. The Global Finals is of highest
honor, highest quality, highest skills, and
highest reputation in all League of Legends
competitions. The global finals have held the
s1-s7 (s is the acronym for season), seven
sessions in total so far. The global finals
generally start between September and
October. The contestants of teams are from the
top level of each major competition area. Only
those teams that perform well in the
professional leagues of each year are eligible
to participate. Each division decides its
number of places in the finals according to the
scale and level. Its global finals in 2017 were
held in Beijing Bird's Nest and caused a
sensation.

7) Intel Extreme Masters (IEM). IEM is the
first global-scale elite eSports tournament. In
2006, Intel Germany and ESL teamed up to
create the IEM Extreme Masters and began
implementing European-based global events.

In February, 2018, with the support of IOC,
Intel held an eSports competition just before
the Pyeongchang Winter Olympics in Korea.
The competition was for Blizzard’s “StarCraft
II” and Ubisoft’s “the Ultimate Summit: The
Olympic Road” and the latter is the official
licensed game of the 2018 Pyeongchang
Winter Olympics.

2.4.3 International organizations for
eSports

At present, the international organizations
of eSports can be divided into league and
championship systems based on different competition systems.

1. League-based system is expected that
there will be a competition for a relatively
long period of time. It should be conducted at
different times as far as possible to cater for
broadcast needs so that the audience will
always have games to watch for a certain
period of time. The representative of the
system is the MLG League: Major League
Gaming. MLG is the top eSports organization
currently enjoying great popularity in North
America's eSports field. It is responsible for
organizing various large-scale online and
offline games covering Europe and the United
States. It is also the largest professional video
game alliance in the world.

2. Championship system, emphasizes that in
a short period of time, a large number of
players will be gathered, and a large number
of matches will be conducted and the rankings
will be decided directly. The representative of the
system is GSL: the full name is Global
StarCraft II League which uses the league
ranking system to allow players to compete in
good faith and have tournaments at the end of the year to determine the real
champion.

2.4.4 Classification and latest development
trends of eSports tournaments

1. Ways of viewing games. According to the
ways that users view matches in eSports
events, they can be divided into two modes: online watching and offline watching.

Before 2016, the entrance to the eSports events was still based on online live broadcasts. The proportion of users who can personally go to the site to watch offline matches does not exceed 10%. However, since 2017, we have been delighted to find that with the increase of the size of major eSports events, social acceptance of eSports, the rapid development of the clubs, and the establishment of eSports towns, eSports offline watching is gradually active. Regarding “League of Legends” as the main game, the domestic eSports are carrying out the home-court campaign of eSports Union in order to learn more from the development model of professional sports and promote the development of eSports industry to offline sports in China. Judging from the actual effect, the localization and home-court development of eSports club not only enlarge the scale of eSports industry, but also improve the stability, geographical characteristics and goodwill of clubs. Moreover, expect for satisfying the local eSports users’ viewing requirements, the home-court development of eSports will also promote the local eSports industry and venue-supported shopping districts. The local eSports supporting industry will develop rapidly. What’s more, the business district surrounding the main stadium will also indirectly benefit from the competition. eSports viewers can conduct more consuming and entertaining activities in supporting commercial areas before and after watching games which can further develop the commercial value of eSports venues. It can be said that the transition of eSports from online game to offline game has broken the pattern that eSports industry relies solely on events, and promotes wider expansion of eSports industry whose trend is worthy of recognition.

2. Organizer. According to the organizers of eSports events, it can be divided into first-party events and third-party events.

WCA (formerly WCG) and ESWC are typical third-party events that have started the first wave of eSports. However, due to the lack of stable sponsors and the rise of the first party, at present, third-party events are at a low tide. For example, a large number of well-known past third-party events such as the WCG eventually fell to the point of being canceled.

At the same time, with the systematic development of eSports, especially eSports has developed into a huge game industry independently, the first-party participants of developers and operators of eSports have begun to pay attention to business opportunities, and rely on their absolute advantage of intellectual property rights, they rapidly focus on the operation of electric competition events. The schedule, rules, and bonuses organized by the copyright owner of this game surpassed the traditional third-party mode and opened the second round of development of eSports industry. The development boom is typically represented by Riot company's LPL and Tencent-led KPL. From the point of commercial value, the current first-party-led events have almost surpassed past third-party events. For example, in the past, the sponsors of third-party competitions were mainly computer hardware manufacturers (such as Samsung Electronics, the main sponsor of WCG), and the first-party games attracted a large number of non-electronic consumer products in addition to continuing to attract hardware manufacturers within industry. For example, the sponsorship of fast-moving consumer goods and even auto makers has greatly enhanced the commercial value of eSports events.
3. Research of eSports Industry Development

3.1 Six stages of eSports industry development and its technical characteristics

The development of eSports is closely linked with the development of electronic information technology, among which the access port of video games is the most critical technology. Each change of the port will bring about the remodeling and upgrading of eSports industry ecosystem. From this perspective, till today, there have been five advances in eSports technology, and eSports industry has also experienced five stages of development and is moving toward stage 6.

3.1.1 Stage 1: Arcade-side times (1970-1998)

In 1971, the world’s first arcade was born in the computer lab of Stanford University. The arcade is a business-specific game machine that is put in public entertainment venues. It originated in American bars and games on it are called arcade games.

The inventor of arcade game is Americans, but it is Japanese that really make arcade games popular around the world. Among arcade games, the most representative game is the shooting game SPACE INVADERS released by TAITO in 1978. In 1980, a large-scale game called “The Space Invaders Championship” was held which was a great sensation at the time. At the same time, it was also the beginning when competitive games became the mainstream type of game.

In 1981, Nintendo’s “Donkey Kong” debuted. The main character Mario debuted and became the image of the Nintendo Corporation’s long-lasting representative. Mario is also the arcade character which China’s first group of game players can access to. Since then, along with the popularization of television, two Contra brothers, developed by KONAMI, entered the family of ordinary people and become initial eSports memories of this generation. During this period, become the first generation of eSports memories to old players. During this period, the games that made the old players feel warm were CAPCOM’s “Street Fighter”, “Metal Gear”, and SEIBU’s “Raiden”.

Comments on Stage 1: The arcade-side era is the embryonic stage of eSports. During this period, eSports industry is mainly concentrated in the game hall, game copyright and game equipment industry, and eSports industry is still in its infancy.

3.1.2 Phase 2: PC-side LAN time (1998-2008)

Representative games in this period include “StarCraft”, “Warcraft 3” and “Counter-Strike”, etc. Important events include ECG, ESWC, and CPL.

What must be mentioned here is: Even today, when we talk about eSports, we have to mention one country, South Korea, and one game, StarCraft. It can be said that the initiator of modern eSports is precisely South Korea and the first game with global influence in modern eSports is StarCraft.

In 1998, the global financial crisis broke out. Although this crisis had brought about a huge negative impact on South Korea’s national economy, it unexpectedly allowed South Korea to develop a new sports industry—the eSports industry. This year, government of South Korea established the strategy of building itself a powerful cultural country and established the Ministry of Culture, Sports and Tourism in Korea. It has unwittingly found and promoted the globalization and industrialization of eSports.

The eSports industry developed rapidly during this period and unlike the arcade era, large eSports events have mushroomed. For example, the MLG was established in 2002 and the IEM was established in 2007, but the most famous of all was the World
Championship “WCG” established in Korea in 2000.

WCG was called "eSports Olympics". At that time it was the dream of global eSports players. Since the event was sponsored by government of South Korean and large Korean companies, the level of the game was quite high. The first competition itself in 2001 attracted 174 players from 17 countries. The games included Quake, FIFA, StarCraft, and Age of Empires and became the first global eSports competition.

Comments on Stage 2: Although the current WCG has been canceled, the road of the sports style of eSports development, which has the leader of government, participant of hardware manufacturers, supporters of clubs, and events as the core, is still worth reviewing and learning. Till now, South Korea is still the country with the highest professional level and the most complete industrial model of eSports.

3.1.3 Stage 3: The age of online games (2008-2015)

During this stage, eSports is gradually separated from online games and the center of the world's eSports industry began to gradually transfer to China.

With the rapid growth of popular online eSports industry in China, a more mature game system was gradually formed. Representative games in this period included “League of Legends”, “Dota” and “Hearthstone” etc. The events included IPL, CFPL, TGA and so on.

Compared with the previous stage, MOBA-type games in eSports gradually replaced real-time strategy games (RTS) and became the leader in this period. Domestic eSports industry of China begun to learn from mature experience of South Korea and eSports industry chain gradually improved. Domestic large online game companies represented by Shengda, Tencent and NetEase continued to grow.

Comments on Stage 3: Due to the immature technology and market conditions, domestic game companies still focus on online games during this period. eSports are still dominated by foreign games while domestic companies only act as agents.

3.1.4 Stage 4: The age of mobile games (2015-2017)

In 2015, with the popularization of smart phones, the age of eSports on mobile phones came. In particular, Tencent’s “King of Glory” won the recognition of the majority of players as the first domestic independent intellectual property game, occupying more than 90% market share of China’s MOBA mobile games which presented a situation of “universal reunification”. The representative game of the same period also included " CrossFire ", etc. The events included KPL and CFM.

During this period, China surpasses South Korea for the first time, becoming the fastest-growing eSports country with the largest number of players in the world (according to Tencent’s eSports survey, China’s eSports users will exceed 200 million for the first time in 2017).

Comments on Stage 4: “King of Glory” is an excellent domestic mobile game. It still has the largest scale of players now. At the same time, “King of Glory” is also the most controversial game in society.

What this article needs to emphasize is that from the perspective of the sports attribute, sports style and future development direction, we do not support mobile phone as basic tool to do eSports. The reason is simple and straightforward: The screen is so small that it brings great damage which is contrary to the development direction of eSports as a sport.

3.1.5 Stage 5: The era of multi-port convergence development (2017 till now)

The arcade side, PC side, and mobile side are in common prosperity. eSports industry has developed rapidly. Games such as “King
of Glory”, “CrossFire: Shooting King” and other games represented by KPL, CFM have taken the lead and lead eSports industry events to surging. At the same time, the access methods for many games are also being extended to various ports, such as the current hottest “PlayerUnknown’s Battlegrounds” which has multiple games on mobile phone and has PC-side games for all as well as the traditional arcade-side way of playstation and Xbox to access. It has formed a variety of events that are prosperous during the stage.

At this stage, Western traditional sports leagues (such as the NBA) begin to attach importance to and invest in the development of their own eSports games based on traditional sports such as basketball, tennis, boxing and combating. These games have been developed based on traditional projects which are in line with the Olympic spirit, the rules of sports events, and can also promote the integration of traditional sports and eSports. So it has broad prospects for development which is worthy of attention.

In addition, along with chances created by StarCraftⅠRecast, StarCraft Artificial Intelligence Competition, and Intel Extreme Masters at the PyeongChang Winter Olympics in Korea, the real-time strategic hardcore eSports with StarCraft as their target have also returned to the mainstream trend.

Comments on Stage 5: The development of hard-core eSports games based on large screen, such as real-time strategy games, sports games, and shooting games with current stock technology conditions, remains the mainstay of eSports industry. From the perspective of the development trend of technological applications, the arcade platform has a broader prospect of sports applications. It could be a eSports platform that is most likely to achieve “stand up and play”. Mobile-based games still require us to continue to observe and wait for technological breakthroughs.

### 3.1.6 Stage 6: New ports and new technologies

New ports and new technologies will become the most important factors affecting the next generation of eSports in the future.

### 3.2 The current problems of eSports industry in size and structure in China

#### 3.2.1 Industrial size

Since the current domestic special statistics on eSports industry have not yet been carried out, our data sources are mainly from professional organizations and game platforms.

According to the “2016 eSports Industry Report of China” (summarized version) published by the GPC and CNG Data and the calculation of CNG Data, the market size of China’s eSports games reach RMB 50.4 billion in 2016 which increase 34.7% of which mobile eSports revenue is RMB 17.1 billion with an increase of 187%. The increase of eSports exceeds the growth rate of actual sales revenue of game market in China, 2016 by 8 times, and is the fastest growing segment.

“The 2017 eSports Development Report of China” released by Penguin Intelligence & Tencent eSports shows that in 2016, the scale of China’s eSports market reached RMB 23.6 billion. It is estimated that the scale of eSports industry in China will reach more than RMB 40 billion in 2017 and the number of eSports users in China will reach 220 million in 2017. eSports is currently in an period of explosive growth both in the market size and the users’ scale.

#### 3.2.2 User scale

“The 2017 eSports Development Report of China” released by Penguin Intelligence & Tencent eSports shows that 2016 is a breakthrough year for domestic eSports industry. As an emerging industry in which the Internet and competitive sports are combined, eSports industry is worth more than 20 billion yuan with actual user size of 170 million
people and potential user size of 450 million, which has made it an important part of the domestic game industry.

### 3.2.3 Characteristics and watching habits of users

“The 2017 eSports Development Report of China” released by Penguin Intelligence & Tencent eSports shows that the age of 30 is the watershed for eSports users. The proportion of users under the age of 25 is 64%, and the ratio of men and women is close to 8:2. Students group is mainly part and the proportion of white-collar workers is high, and users infiltrate into the public. eSports users have the largest number in second-tier cities and have the highest penetration rates.

About feelings of eSports events, the user's attention is no longer limited to the experience of the screen. It is changing to many dimensions, including the game’s competitive, professional, and recreational atmosphere, event scale, event atmosphere, event awards (表达) and so on. eSports users focus more on the competitiveness and professionalism of the event (including performance of players and commentary levels, etc.), and there has been a gradual reduction in the material incentive for the event.

According to the report, nearly 65% of users are interested in electric games in 2016, and 77.6% of users agree that eSports is a new sport. About the viewing habits, 40.6% of eSports users choose to watch games with their friends, and the social attributes generated by viewing games with acquaintance become the user's first choice. 79.8% of users choose to watch games at home, and 84.8% of eSports users will still do things related to the game even the game is over, such as reviewing, sharing and so on.

### 3.2.4 eSports Industry Chain

At present, eSports industry chain mainly revolves around the overall operation of the eSports games as the core frame of operation, which can be divided into two components: eSports core industry and eSports derivative industry. Among them, core industry of eSports includes the organizers, players, clubs and sponsors. Derivative industries of eSports include live broadcasting platforms, venue services, brokerage services, anchor comments services, etc. (Table 2).

From the perspective of industry structure of eSports, the current eSports industry is characterized by the fact that the growth rate of the derivative industry exceeds that of the core industry.

### Table 2 Composition and Structure of E-sports Industry

<table>
<thead>
<tr>
<th>Industry Chain</th>
<th>eSports Competition Industry</th>
<th>Revenue of eSports</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eSports Core Industry</td>
<td>Clubs</td>
<td>18.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Copyright</td>
<td>11.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Players</td>
<td>6.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sponsor</td>
<td>7.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Content</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eSports Derived Industry</td>
<td>Live Broadcasting Platforms</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Venue Services</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brokerage Services</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anchor Comments Services</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>eSports Education</td>
<td>3.2</td>
<td></td>
</tr>
</tbody>
</table>

Note: According to the survey data of iResearch “2017 eSports Ecology Research”.

Take eSports players as an example. At present, the income of eSports professional players in China mainly comes from the salary
in clubs, bonus obtained from competitions, the dividends of eSports live broadcasting platform and income from the endorsement of products, and the income level of e-sports players is above the industry’s average level which is as much as millions. In sharp contrast, the income of the eSports anchors is far higher than that of the eSports players, and they are often able to reach the million-level level, even some famous anchors will reach tens of millions. Therefore, an interesting phenomenon appears that in order to attract viewers, currently large live broadcast platforms offer eSports teams and eSports players with generous rewards and contracts of dividends. A large number of professional players have diverted themselves to become eSports anchors. This kind of derivative eSports industry with webcasting as its medium has great economic and social influence and must be highly concerned. The economic phenomenon of the current eSports industry that players prefer to be anchors is also worthy of our further observation and reflection about its reasons to assess its overall impact on eSports industry.

3.2.5 Main Problems in eSports Industry

Although the growth rate of eSports industry in China has been rapid in recent years, there are still problems in it. For example, it has problems such as relatively simple profit model, insufficient reserve of professional talents, unreasonable industrial structure, and scattered enterprise power which require to be settled urgently.

Comparing with mature business operations in Europe and the United States, the commercialization of domestic eSports events is still in its infancy. Problems need to be further solved such as the professionalization level of eSports, the underestimation of eSports business value, and imperfect business ecology rules.

In addition, we have noticed that as game developers and operators’ intermediaries are involved, and other third-party eSports organizations are in survival of the fittest, the concentration of eSports industry continues to intensify. eSports resources are increasingly monopolized in a few large companies which increases our concern about the possible oligopoly structure in the future of eSports industry.

4 The Importance of the Development of eSports Industry

4.1 eSports industry is an important driving force for national science and technology innovation

4.1.1 eSports is the closest partner for technological innovation

ESports is an emerging industry with strong technical characteristics. Every upgrading of information technology will bring a leap to the eSports industry. This is the most prominent feature of eSports industry that distinguishes it from other entertainment industries.

E Sports is also the primary application area of the latest modern science and technology. As mentioned above, not only artificial intelligence technology, but also other science and technology, such as modern communication technology, chip technology, new visualization technology, big data technology, wearable technology, etc., all of them choose eSports as the first breakthrough, which must have unique reasons.

Recalling the history of the development of eSports from birth to today, we have found that the development of eSports and eSports industries depends on the technological revolution first, and secondly on the change of business models. While the base of business model changes is still technology. For example, mobile technology determines the possibility of charging model of eSports platform, and the eSports industry brought by the information technology revolution has
evolved into new industrial chains such as webcasts and Internet cafes.

ESports and technology are mutual cause and can promote each other. Every major scientific and technological revolution will bring about the transformation and promotion of eports, which will lead to the birth of a number of popular games and events. For example, the popularity of local area network technology has spawned the excitement of competitive games such as StarCraft, Quake, and Delta. Every major eSports game launch or version upgrading will certainly lead to lots of gamers to update their own computers, mobile phones, peripherals and other equipment, for example, due to the higher hardware requirements, the hot PlayerUnknown's Battlegrounds in last year has made Internet cafes, which have been declining over the past several years, to become overcrowded once again. “Internet café” is created by a new generation of hardware devices.

It can be said that, compared with other traditional service industries with low technological sensitivity such as traditional sports, culture, and entertainment, eSports is the closest and most faithful partner in modern social science and technology innovation.

4.1.2 eSports is an important component of information consumption, and it is an important point for national science and technology innovation under new historical conditions.

The report of the 19th CPC National Congress proposed that innovation is the primary driving force for development and the strategic support for the construction of a modern economic system. We must understand the importance of scientific and technological work from the perspective of safeguarding the country’s long-term strategic significance. From the analysis of the content of eSports technology, we can see that eSports is not only a field of experimentation for new technologies, but also a new kind of information consumption behavior that can transform various new technologies into the potential of consumption at the fastest speed.

The basis of information consumption is the innovation of information technology. Every scientific and technological revolution or overturning technological innovation will bring about a revolution in information consumption upgrades or in information consumption methods, such as smart phones, the Internet, mobile 4G, and artificial intelligence.

Encouraging eSports is to encourage investment in social innovation through social consumption, and to absorb the risks of single country investment in science and technology. Consumers’ pay and active consumption are the most effective ways to encourage technological innovation. The significance of eSports consumption is here. It has a great influence among young people, a great potential for consumption, a significant effect on science and technology transformation, and it is an important starting point for digesting innovation risks, encouraging the entire society to innovate in science and technology. It is also a new type of information consumption industry emerging in a new era which is of great significance in the long run.

4.2 eSports industry can become the “new kinetic energy” of traditional sports industry

ESports has caused a huge impact on the traditional sports industry. According to our survey in 2017, domestic young people aged 16 to 25 spent an average of 33% of their leisure time on eSports and other online games, which inevitably squeezes the time of traditional sports activities. This is not only the case in China. In the developed countries represented by the United States which has developed sports industry, eSports have also
had a huge impact on the number of audiences, ticket sales, and broadcast of traditional sports.

Because of its convenience, economic effect, and high entertainment, eSports has occupied a large number of young people’s time for traditional sports programs. This is a great challenge to traditional sports and must be effectively guided. However, we should see the progress of technology and communicating methods brought about by eSports, which has brought new opportunities for the traditional sports industry.

From the perspective of communication, when people watch the Olympic Games, they are often not limited to their own favorite individual projects, but will extend to other more projects. This spillover effect of attention has important practical significance for today’s Olympic movement. Bringing eSports into the Olympic Games will enable more young people to pay attention to the Olympic Games themselves. It can increase the influence and attention of the Olympic Games in the younger generation and increase the experience and love of the young people for the Olympic Games and the Olympic spirit. It can help young people re-understand the significance of physical activities and the value of traditional sports programs which is conducive to inheriting and promoting the Olympic spirit and culture in a new technological environment.

One of the major categories of eSports events is sports games. Sports games are the carriers and important propaganda means of traditional sports. In our previous research, we noticed that the current Western sports powers have begun to emphasize and play an active role in eSports’ popularity, skills reserve, and practical use of traditional sports.

Nowadays, VR, AR and wearable technologies are increasingly mature. Judging from the trend of technology development, the active port of eSports also has a breakthrough trend. In the future, eSports projects may have the characteristics of “high-volume physical activity” and become a new sports item. Our advocacy of “Let players stand up” has become a new idea for some game developers. Of course, these types of games are currently constrained by cost and technology and are in the early stages of development. The government and industry planning departments can pay close attention and give support in proper time.

From the perspective of school sports, the content of scenes contained in eSports is easier for young students to accept, and eSports has created a series of Internet technologies that are more flexible and convenient. Therefore, eSports also has the ability to become an important auxiliary tool and extension method for traditional physical education.

4.3 eSports industry is an important breakthrough for China’s international sports discourse power

As a new type of sports, eSports has a unique cultural heritage. In particular, although China is a major consumer of eSports and has the largest number of players in the world, the majority of popular eSports games are still foreign intellectual property products. This shows that it is necessary for us to study the cultural basis of eSports. Apart from its competitive characteristics, eSports also has profound cultural connotations. For example, the latest eSports project “Stranded Deep” (commonly known as Winner, Winner, Chicken Dinner) since 2017 is based on the American writer Susan Collins’ “Hunger Games”. Although videogame companies in China have gradually developed eSports games such as “King of Glory” with ethnic cultural characteristics, the confusion of historical figures has also caused much debate. In addition, we also see that, unlike traditional
sports, the life cycle of the eSports project itself is very short, but the gameplay is relatively mature and fixed, such as real-time strategy, shooting, multiplayer tactics, sports, etc. Each type of gameplay actually inherits some of the classic games in history, and forms a rolling development model that is unique to eSports with classic game culture as its core. Therefore, it is also necessary to research on the classification and cultural framework of eSports culture.

More importantly, the construction of Chinese eSports culture is an important step for China to rely on the rise of China in the future and establish China's eSports rights for international sports.

For a long time, most of traditional sports represented by the Olympic Games come from Western cultural content. As a sports power, the future of sports in China should not only have the responsibility to maintain sports order, but also have the strength to make rules. At the same time as China develops rapidly, international sports discourse power of China should be matched with economic discourse power and political discourse power.

In today's world, the rise of China is an indisputable fact. During the “Thirteenth Five-Year Plan” period, economy in China still maintained a medium-to-high-speed growth. Its economic aggregate ranked second in the world, and its contribution to world economic growth exceeded 30%. On the other hand, China has the largest number of Internet users at present around the world, and the application and popularity of “Internet Plus” are among the highest in the world. The scale of eSports industry in China is also the largest in the world with a rapid growth rate. It can be said that China has the strength to lead the world's eSports trend.

Therefore, in the case of a dominant external condition and the background that the new generation of sports represented by eSports which has been accepted and valued by the International Olympic Committee and other sports organizations, and high-tech giants in developed countries have entered eSports for discourse power in the sports market (for example, Intel and Ubisoft organized the PyeongChang Winter Olympic Games eSports exhibition match in a very short time after the IOC recognized that it was a kind of sports). It is necessary for eSports people in China to stand on a strategic level and pay attention to the development of local eSports companies and culture from now on, grasp the historical opportunity of the second wave of eSports industry, and grasp the discourse power in international sports from three aspects: the development of eSports game projects, the selection of eSports international event projects, and the development of eSports international competition rules.

5 The Core of Negative Problems of eSports: The Causes and Solutions of “adolescent issues”

5.1 The causes of negative effects of eSports on adolescents

As mentioned above, this negative impact can be divided into two levels: The first kind of negative impact comes from the negative impact of online games on teenagers; the second negative impact is that it has some harmful influence on the healthy growth of teenagers. The core of all these problems is the “adolescent issues”.

Among them, the second impact is the internal management of the industry, which can be solved through the internal management of the industry. At present, many eSports clubs have begun to attach importance to the logistical support for young players, career development after retirement, and professional ethics constraints. In the future, this problem will be more easily solved with
the maturity and regulation of the industry.

However, the first kind of influence is the issue that has the greatest social controversy and cannot be overcome within the industry. Only through economic, cultural, psychological, and social analysis at various levels can the causes be clearly identified, and this article will focus on it to analysis.

5.1 Economic aspect

From the perspective of economics, the eSports service industry is unlike traditional service industries, which have low labor productivity and rely mainly on labor input. The eSports service industry has the characteristics of typical economies of scope, economies of scale, and incremental benefits. This also means that eSports products (such as content of competition and games themselves) have highly interesting, low-threshold and low-cost features. The most important economic factor that causes this kind of product characteristics is that eSports products are the same as online games. The price formation mechanism is an asymmetric sharing mechanism. That is, players are often free when they acquire, but they will continue to increase their fees in the process of playing games and watching live broadcasts. Therefore, it constitutes a highly viscous, low-elastic, and price formation mechanism.

In the Internet economy, such products are everywhere. In the production process of such commodities, the goal of manufacturers is to attract internet data with products that can be copied indefinitely and with almost infinite scale effects, and get profits through advertising and sponsorship. Although consumers have obtained free products, they must provide their own data and network retention time to obtain more free usage rights. This asymmetry of production and consumption leads to the fact that consumers are passive and dominated in eSports industry, resulting in adolescents’ irresistible motivation to purchase games products, and ultimately causing teenagers to consume too much time on games. The unfavorable situation affects the available time of young people engaged in normal sports and other healthy entertainments. In this process, the claims of producers and consumers of eSports industry are different, and the transaction itself is fair. It is unfair to use the ethical standards to blame the producers. However, the extra losses borne by consumers are spillovers, post-event and difficult to quantify at the same time, so they need some kind of compensation mechanism to make up for it. There are many similar phenomena in the Internet economy, such as "big data and privacy", "privacy for convenience", etc., they are essentially the same type of problem.

5.1.2 Cultural aspect

ESports is a typical cultural product. Content of eSports game and information online have their own high-entertainment and high-interesting cultural qualities. The essence of this culture is entertainment, which is a typical “happy consumption”, which is to satisfy spiritual and psychological needs. This cultural product is characterized by the desire to maximize psychology and spiritual satisfaction of consumers. It has low price elasticity and its pricing is out of cost. Moreover, it is easily addictive.

5.1.3 Psychological aspect

Fundamentally speaking, playing games is a human nature and one of the most important ways for humans, especially adolescents, to explore the world. Some scholars who study the psychology of online games believe that the reason why game enthusiasts are so addicted to constantly upgrade equipment in virtual world is that there are “dopamine neurons” in everyone’s head and “the mechanism against stress generated by human evolution”. However, this biological science explanation does not completely answer
negative issues that more emerged in eSports industry. The reason is that the composition of human mental and psychological need is very complex. In addition to normal self-satisfaction, people’s psychological needs also generate complex emotions such as showing off, seeking novelty, comparison, and jealousy in the interactive process, which can be found everywhere in the industry, especially in live game broadcast with reward. It is difficult to use ethical standards to restrain them. At the same time, compared with adults, adolescents have less psychological self-discipline and greater curiosity, and are more susceptible to these psychological factors, amplifying negative effects in the eSports industry.

5.1.4 Social aspect

Although the current call for supervision and control over eSports and online games is very high and relevant policies have been formulated, in terms of actual results, society still lacks systematic understanding and scientific methods to guide this issue. The regulatory and governance mechanisms for such negative impacts need to be further streamlined.

From the above analysis, we can see that the adverse effects brought about by eSports industry have intrinsic and profound economic, cultural, psychological and social reasons. These reasons are intrinsic to eSports industry, but the negative impacts and social governance costs that are passed on to families and societies are high. They need to be attached high attention and logical solutions must be found.

5.2 Solutions to the negative effects of eSports industry

In fact, at present, the Internet economy, including eSports, has exceeded the range that traditional economics can effectively explain in many aspects. The analysis of similar economic phenomena requires proof of theoretical innovation and practice. For example, the theory of resource reorganization and service industry growth in highly interconnected society that is being actively discussed in domestic economic circle is a new theoretical system proposed for Internet economics. This article attempts to propose the following solutions based on this theory and the characteristics of the eSports industry.

5.2.1 The means of economics

The above economic analysis of eSports products shows that the claims of producers and consumers of eSports industry are different. Although the transaction itself is fair and both parties of the transaction are not wrong, the extra losses borne by the consumers indeed exist. Moreover, the accumulation of this loss over time has a huge and long-term impact on physical health and mental health of adolescents which is a significant negative externality. Therefore, from the perspective of economic policy, it is necessary to establish some kind of consumer cost compensation mechanism in eSports industry. However, this mechanism should be market-based, rather than the direct intervention of the government that previously used (The fact proved that the interventions and regulations based on standards for the evaluation of producers' morality will only interfere with market and will often be difficult to implement in reality). In order to construct such compensation mechanism, this paper proposes to set different pricing for adolescents of different ages based on the definition of property rights of consumer traffic. The basic idea is that the smaller the age, the longer the time, and the less physical activity, the greater the additional losses incurred, then the higher the price the company needs to obtain its internet data and the more health services that need to be compensated for. Only by establishing differential pricing based on a clear definition
of the internet data flow of property rights, can it be possible to reconnect the producers and consumers in the most appropriate manner and minimize the negative impact of eSports industry beyond affecting market operations. Of course, this theoretical concept is proposed for the first time in this paper, so how to achieve it depends on the deepening of research in the future.

5.2.2 The means of laws

Our current task is not to abandon this industry because of negative issues in eSports industry. Instead, it is necessary to ensure the healthy development of eSports industry while taking into account the negative social issues. Similar situations actually exist in other areas of the Internet economy. For example, in the process of protecting privacy and the development of the big data industry, there are the same dilemmas. The foreign experience is that it should be constrained by legal means. For example, the Commission of European Union adopted the "General Data Protection Regulation" (GDPR) to determine the protection and supervision of personal data in the form of regulations, including the rights to delete personal data. This is the most striking law in the Internet economy right now. The same idea can also be introduced into the legal construction of eSports industry in the future.

5.2.3 The means of professional sports

The international development experiences and lessons of eSports show that the reason that eSports industry is able to gradually separate from online games and embark on an independent development path is that it has core strength of professionalization and sports. Only by developing the eSports industry as professional sports can we develop the educational function of sports and promote the spirit of sports. At the same time, we can better overcome common problems of online games in eSports games. For example, taking eSports as an example, Korea was the first country to achieve professionalization in eSports. From the current eSports operational situation in Korea, after professionalization of eSports, ordinary players will spend more time to watch events, broadcast eSports culture, and engage in charity events in stadium as healthy styles, which is very helpful to guide eSports in a healthy and optimistic direction. In addition, according to the global eSports statistics of Newzoo in 2017, 42% of the people watching streaming video games in the world do not play games on their own and they only participate in the e-sports industry as viewers. Even in the most popular eSports games, such as League of Legends, Counter Strike, and DOTA 2, 23% of the audience only watch games and don’t play the game themselves. Especially with the trend that domestic eSports expanding from online to offline, we believe that more players will gradually spend less time on playing computer games and participate in the offline activities of eSports. In addition, the personal problems in the negative effects of current eSports mentioned earlier in this paper are the problems of players’ age, short sports life, and inadequate protection, which precisely show the need for the mature professionalization of eSports. Only in that way, the problems can be better solved.

In short, the professionalization and sports development of eSports is the ultimate solution to the negative effects of e-sports. This is not only the law of eSports industry itself, but also the breakthrough of the industry supervision of eSports industry in the future. In this aspect, government departments, especially the sports departments, can play a greater role.
6 Policy Recommendations to Promote the Healthy Development of eSports

Under current circumstances, eSports and eSports industries in China are at a critical period of rapid development. The development of eSports industry is of great strategic importance. At the same time, the negative impact of eSports industry is also becoming more and more prominent. Enterprises and society are expecting related policies of government to lead eSports industry to healthy developmental way.

However, judging from the actual situation, there are many administrative departments in eSports industry in China and the power is scattered. The recognition of the development of eSports in different departments is not uniform. There is a game of multi administrative forces in the development direction of eSports in various government departments. The policy of regulatory measures often depends on the intensity of social public opinion at that time, and the stability and operability of policies. The erratic supervision actually shows that management departments of China still have many misunderstandings about eSports.

Therefore, based on the previous analysis, this paper proposes the following three principles for the promotion of the healthy and orderly development of eSports: 1) Define the nature and development model of eSports and eSports industry; 2) Focus on market-based solutions to solve negative issues in eSports; 3) Pay close attention to the time and direction of eSports technology breakthroughs.

6.1 Define the nature and development model of eSports and eSports industry

From the perspective of government management, we must clarify the character and development model of eSports and eSports industry. It is recommended that government departments fully learn from the development experience of eSports industry in developed countries, closely follow the direction of the current major developed countries to formulate eSports policy, effectively distinguish different attributes of eSports and online games, and act according to eSports industry's own development law.

In the future, it is necessary to combine the emerging direction of sports development in eSports market, and to further define the development path of eSports of competitive sports and professional sports. Only by clarifying modes of eSports can it be possible to work in accordance with the law of development of things and formulate comprehensive and reasonable guiding industrial policies and social supervision policies.

6.2 Focus on market-based solutions to solve negative issues in eSports

From the perspective of economic policy, departments of government in China often used a controlled approach to intervene in eSports industry in the past. However, the facts show that this kind of embargoed governance means is neither reasonable nor possible to help young people leave computer desk and go to the stadium. This paper believes that from the perspective of international experience and current actual situation of China, traditional government intervention measures are not logical and effective for eSports, which are dominated by innovations of enterprises, free choices of consumers, and unique pricing mechanism. In the future, it is more important to rely on market measures and regulatory mechanism of eSports market itself to solve the negative externalities of eSports industry. The starting point of economic management of government should begin with the definition of property rights, by influencing price formation, to establish a market-based consumer
compensation mechanism. The government should use market methods to solve the negative problems in eSports industry so that we can achieve long-term and effective policy effect.

6.3 Pay close attention to the time and direction of breakthrough in eSports technology

eSports is an industry that has a close relationship with technological innovation in information consumption. At the same time, eSports is also an athletics industry closely related to the healthy growth of adolescents and their development of sports habits. Therefore, the government can encourage social capital and enterprises through industrial support policies to create more eSports technical innovations that are directly related to physical activity. At a appropriate time of technological breakthroughs, strong support should be given to guide the entire industry in the direction of healthier, more interesting and more positive development.

7 Conclusions

eSports was born from video games. After decades of tortuous development, it has finally come into the road for professional sports and competitive sports. The direction is very good and the road is right. Although there are still such problems in the development of e-sports, as long as they follow the laws of economy, the laws of sports, and the laws of social development, persist in using scientific methods to analyze problems, and persist in using the market to guide industries, then eSports and eSports industry in China will certainly be able to develop a healthy road with Chinese characteristics in the new era.

References

http://www.gov.cn/zhengce/content/2014-10/20/content_9152.htm.
http://www.gov.cn/zhengce/content/2016-06/23/content_5084564.htm.
http://www.gov.cn/zhengce/content/2017-08/24/content_5220091.htm.
Xiong Douyin, 1996. What is sports[J]. Sports History.,:8-10.

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①The data comes from the 2017 China eSports Development Report released by Penguin Intelligence and the WeChat ID is “BizNext”.
②The “Guide to 24 Hour Exercise for Children and Adolescents in Canada” aims to encourage children to develop a positive lifestyle and strive to achieve “three balances” of “sleep, sit and exercise” every day to ensure their healthy development. The guideline proposes that entertainment screen for youngsters aged 2-17 should not exceed 2 hours per day, while limiting other sit-in times. However, unfortunately, according to the 2016 agency survey, only 24% complete this goal. More children are still attracted to the content of the screen, especially the video games to extend the sit-in time.
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②https://baike.baidu.com/item/esports

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①World Cyber Games was founded in 2000 and ended in 2013. It is a global e-sports event, known as the “eSports Olympics”. This event is conducted by the International Cyber Marking (ICM). Sponsored by Samsung and Microsoft (since 2006).
②https://baike.baidu.com/item/esports. This is a definition of eSports generally accepted by all walks of life in China. In fact, this definition is closer to the "Elite sports" in English.
③At present, the domestic sports science community has just begun the study of physical sports indicators of eSports and has not yet formed a unified standard. The premise for the future of eSports to enter sports programs is the need for sports departments to introduce sports standards for eSports. From current recognized eSports projects, such as StarCraft, WarCraft, CS, Dota, and League of Legends, “immediateness” and “operational intensity” are the essential characteristics of main eSports games that distinguish themselves from most online games and platforms of chess games. In standardized eSports industry standards, the immediacy, the strength of hand-eye operations, and the number of strategies can all be refined into quantitative indicators through technical statistics, so that a set of e-sports unique sports standards can be formed.

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①Embodied cognition, also called “embodiment”, is an emerging field of research in psychology. The theory of embodied cognition mainly refers to the strong connection between physiological experience and psychological state. Different from traditional cognitive theory, embodied cognitive theory emphasizes the great role of body in cognitive process.
②In paper “Body Quality: A Concept of Leading Contemporary Sports Reform and Development”, Ren Hai makes a review of “body quality” for the first time. He suggests that the concept of “body quality” not only solves the increasingly serious global problems of health brought about by lack of physical activity, but also effectively promotes the integration of sports into life, improve the overall quality of life.

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①According to “National Competitive Industry Classifications” GB/T 4754-2017, this paper selects part of eSports industry, and marks the relevant industry classification code.

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①At present, the national statistical department has not yet established a special statistical standard for eSports industry. Therefore, the paper quotes data and opinions of “2016 eSports Industry Report of China” by GPC and CNG Data and the “2017 eSports Development Report of China” by Penguin Intelligence & Tencent eSports. It is hoped that the statistical department will publish special statistical classification standards for eSports industry in the future.